



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,297	03/04/2002	Ronald M. Kubacki	02-105	7834
24026	7590	05/25/2004	EXAMINER	
PHILIP O POST				DUDA, KATHLEEN
25 APPLEY COURT				
CHERRY HILL, NJ 08002				
ART UNIT		PAPER NUMBER		
		1756		

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/090,297	KUBACKI, RONALD M.
	Examiner	Art Unit
	Kathleen Duda	1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 04 March 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-5, 13 and 16-28 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-5, 13 and 16-28 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 04 March 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

1. Claims 1-5, 13 and 16-28 are pending in this application.

Drawings

2. The corrected drawings were received on March 4, 2004. These drawings are accepted by the examiner and overcome the objection to the drawings made in the last office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidman (US Patent 4,921,321) in view of applicant's admitted prior art.

Weidman teaches an amorphous silicon material which is useful in the fabrication of optical devices. An optical device, including a waveguide (side) region, may be formed which comprises a region of silicon-containing material formed by the photo-oxidation of polysilyne wherein the silicon-

containing region has a refractive index that differs from adjacent regions of the waveguides (abstract, column 4, line 46 to column 5, line 19 and column 8, lines 35-62). While Weidman does not explicitly disclose the specifics of waveguide structure, such as the bottom boundary and top boundary layer, the applicant teaches on pages 2-3 of the specification that a conventional waveguide structure includes in addition to the waveguide core and side boundary layers, a top boundary and bottom boundary layer. It would have been obvious to one of ordinary skill in the art to have the optical waveguide in the method of Weidman also include in addition to the waveguide core and side boundary, a top boundary and a bottom boundary layer because applicant's admitted prior art teaches that these features are present in a conventional waveguide structure.

5. Claims 13, 16-19 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutta (US Patent 5,608,566) in view of Weidman.

Dutta teaches a waveguide structure which is capable of switching a signal in any one of four directions. A multiple quantum well structure 5 (barrier) is sandwiched between upper and lower waveguides 4 and 6. The upper and lower waveguides are sandwiched between upper and lower cladding layers 3 and 7 (column 1, lines 13-16; column 2, lines 49-51 and column 3, lines 50-61). Dutta however does not disclose that the waveguide

(core) layers 4 and 6 comprise silicon and organic components and one photo-oxidized region. Weidman teaches an amorphous silicon material which has a large drop in refractive index when photo-oxidized and is therefore able to produce optical waveguide structures with high resolution. An optical device, including waveguide (side) region, may be formed which comprises a region a silicon-containing material formed by the photo-oxidation of polysilyne wherein the silicon-containing region has a refractive index that differs from adjacent regions of the waveguides (abstract, column 4, line 46 to column 5, line 19 and column 8, lines 35-62). It would have been obvious to one of ordinary skill in the art to have used polysilyne for the waveguide material layers in the method of Dutta because Weidman teaches that polysilyne has a large drop in refractive index when photo-oxidized and is therefore able to produce optical waveguide structures with high resolution.

Response to Arguments

6. The Tomaru references has been removed from the art rejections because the claims have been amended to recite Si-Si and Si-H fragments which are not taught by the polysiloxane of Tomaru.

Applicant argues that Weidman does not teach Si-Si and Si-H fragments because a preponderance of Si-Si bonds is taught. The claims use open language that there are Si-Si and Si-H fragments, no ratio is taught. Weidman teaches a polysilyne which can have alkyl substituents (column 3, lines 15-32).

Applicant argues that Dutta does not teach Si-Si and Si-H fragments. Dutta was not cited for the teaching of the composition. Dutta was used in combination with Weidman. Weidman was cited for the teaching of the composition and Dutta was cited for its structure teaching.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

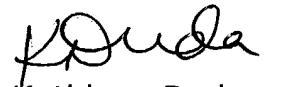
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication should be directed to Examiner K. Duda at (571) 272-1383. Official FAX communications should be sent to (703) 872-9306.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff, can be reached at 571-272-1385.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kathleen Duda
Primary Examiner
Art Unit 1756